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Proceedings of the society, with an introductory essay on the geography and ethnography of the country, together with accurate maps.

In the Proceedings of the Royal Geographical Society, April, 1876, there is a review of Thompson's Marco Polo's Six Kingdoms or Cities in Java Minor identified in Translations from the Ancient Malay Annals.

The Museum of Ethnology at Leipzig, founded upon the magnificent collections of Dr. Klemm, of Dresden, has published its third annual report, containing the reports of the treasurer and of the trustees, and a list of the members and of the additions during the year.

Friederich von Hellevald, who has just succeeded Dr. Peschel as editor of *Das Ausland*, is engaged in compiling a geography on the principles adopted by Élysée Reclus in his *Géographie Universelle*. The work, which is to appear in fifty numbers, is entitled *Die Erde und ihre Völker*, and is to be published at Stuttgart, by W. Spemann & Co.

The American Association for the Advancement of Science will meet at Buffalo, August 23d; a subsection of anthropology will then be formed. Immediately afterwards, September 4th, the International Convention of Archæologists will meet in Philadelphia, where the finest display of American antiquities ever brought together is on exhibition in connection with the Centennial. The British Association will meet at Glasgow, September 6th. The International Congress of Anthropology and Prehistoric Archæology will meet at Buda-Pesth, 4th to 11th of September. The French Association will meet at Clermont-Ferrand, August 19th. The annual meeting of the German Anthropological Society will be held in Jena from the 9th to the 11th of August. — O. T. MASON.

GEOLOGY AND PALÆONTOLOGY.

EXPLORATIONS BY WHEELER'S SURVEY. — In Mr. Gilbert's report we find an interesting chapter on the Colorado Plateau, which lies between the Rocky Mountain system and the Basin Range system at the east and west, and stretches northward to the Uintahs. The simplicity of its structure, he says, the thoroughness of its drainage, which rarely permits detritus to accumulate in its valleys, its barrenness, and the wonderful natural sections exposed in its cañons, conspire to render it indeed "the paradise of the geologist." Mr. Gilbert's studies supplement those of Newberry, Marcou, and Powell. This mountain system resembles the Appalachian in the absence of any great central axis, and in the general tendency to uniformity throughout, but differs widely in other respects. "In the Appalachians corrugation has been produced commonly by folding, exceptionally by faulting; in the Basin Ranges commonly by faulting, exceptionally by flexure." He believes that in the Appalachians the primary phenomena of mountain-building are superficial, and that in the Basin Ranges they are deep-seated, the superficial being

secondary ; that such a force as has crowded together the strata of the Appalachians, whatever may have been its source, has acted in the Basin Ranges on some portion of the earth's crust beneath the immediate surface ; and the upper strata, by continually adapting themselves, under gravity, to the inequalities of the lower, have assumed the forms we see. The geology of the Great Salt Lake is discussed at length, and in a way to excite fresh interest in the history of this wonderful lake.

MEEK'S INVERTEBRATE FOSSILS OF THE UPPER MISSOURI.—This splendid quarto volume has just been issued as volume ix. of the final reports of Hayden's United States Geological Survey of the Territories. It relates chiefly to fossil shells of the cretaceous and tertiary formations of the head-waters of the Missouri, which were largely collected by Dr. Hayden early in his explorations in the West. The different divisions of the cretaceous and tertiary formations of this region were originally established by the invertebrate remains herein described, and it therefore forms the basis of our knowledge of two of the most important formations in the West. As one of the series of volumes issued by the survey, and following those of Leidy and Cope on the fossil mammals, and of Lesquereux on the fossil plants, it contains a large mass of facts contributing toward the solution of one of the most difficult problems in western geology, namely, "the relations of the Lignitic group to the well-defined cretaceous formation immediately beneath it." The discussions by Mr. Meek of this vexed question will interest geologists. The work is illustrated by forty-five plates, with six hundred and twenty-nine pages of text ; and from the carefully elaborated introductory essay, the full discussion of synonymy, the careful and detailed descriptions of the genera as well as species, it is evident that the work will add to the high reputation of the distinguished author, and be a classical contribution to American palæontology.

A FOSSIL SKUNK FROM THE BONE CAVES OF PENNSYLVANIA.—In a recent paper on the Dental and Cranial Characters¹ of *Mephitis*, Dr. Coues has described a supposed new species of fossil *Mephitis* from the bone caves of Pennsylvania, and has given detailed descriptions of the skulls and dentition of the different genera of this group. The *Mephitinæ*, embracing the "skunks," is, as is well known, restricted in its distribution to the two Americas, and its representatives are also known to be among the most variable, both in osteological and external characters, of American mammals. In speaking of the common skunk (*Mephitis mephitis*), Dr. Coues says that he is acquainted with no animal that varies more than this, and few that exhibit such remarkable differences, independently of age and sex. "Some specimens," he says, "are a fourth larger than others, and twice as heavy ; and there is

¹ On the Cranial and Dental Characters of Mephitininæ, with Description of *Mephitis frontata*, n. sp. foss. By Dr. Elliott Coues, U. S. A. Bulletin U. S. Geological and Geographical Survey of the Territories, Second Series, No. 1, pp. 7-15. Washington : Government Printing Office. 1875.

a corresponding range in contour. Compared with an ordinary ratio of osteological variability, the discrepancies are almost on a par with those exhibited by the coloration of the animal when set over against the more constant markings of most animals." These variations are described somewhat in detail, in connection with a general description of the cranial characters of the species.

Dr. Coues recognizes among the *Mephitinae* the three genera *Mephitis*, *Spilogale*, and *Conepatus*. The two first named differ not at all in their dental formulæ, while *Conepatus* has usually been considered as lacking the minute first premolar present in the others. Dr. Coues, however, affirms that it is present as a rule, though always minute, but is often either deciduous or abortive, and never functionally developed. Hence the main differences appear to relate to the general contour of the skull, for while Dr. Coues has described each form with great detail he has failed to give a contrasted summary of the differences that severally characterize these so-called genera, — an omission that detracts considerably from the availability of an otherwise excellent paper. While *Mephitis* and *Spilogale* seem to be hardly generically separable, *Conepatus* presents wider differences, especially in respect to the characters of the lower jaw.

No synonymy is formally presented in this connection, but it is mentioned incidentally that the *M. occidentalis* of authors is inseparable from *M. mephitica*. Of *Mephitis* proper only the single recent species *mephitica* is mentioned; of *Spilogale*, a single species only is noticed, *putorius* Linn., based on Catesby (= to the *M. Zorilla*, *bicolor*, and *interrupta* of recent authors), and of *Conepatus* also but a single species (*marputio* Gmel. = *mesoleuca* Licht.).

The supposed new fossil species here described seems to present no very tangible features. Its size is stated to be intermediate between various specimens of the recent *M. mephitica*, the only ostensible characters hence being the excessive tumidity and angulation of the vertex of the skull, and the vertical narrowing of the zygoma anteriorly. In view of the normal tumidity of the frontal region, and especially the tendency, so readily seen in any large series of the skulls of the common species, to a diseased and abnormal enlargement of this part, this alleged character has much less weight than it would otherwise have.

GEOGRAPHY AND EXPLORATION.

THE ISTHMUS OF TEHUANTEPEC. — We extract the following account from Sumichrast's notes on the birds of the isthmus in the fourth Bulletin of the United States National Museum. The contraction of the American continent between the ninety-fourth and ninety-fifth degrees of longitude west from Greenwich forms what is called, quite improperly, perhaps, the Isthmus of Tehuantepec, whose width between the mouth of the Rio Coatzacoalcos and the Bay of Ventosa is about one hundred and eighty miles.